

**REMARKS**

Claims 1-26 were pending in the current application. Applicants have added new claims 27 through 49. Reexamination and reconsideration of all pending claims are respectfully requested.

Applicants acknowledge and appreciate the indication of allowability for Claims 8-23 and 26.

**§ 103**

The Office Action again rejected amended Claims 1-7 and 24-25, which includes independent Claim 1, under 35 U.S.C. §103(a) based on Das et al., US 2002/0167992 A1 (“Das”) in view of Hsu et al., U.S. Patent 6,665,308 B2 (“Hsu”). Applicants respectfully traverse this rejection.

Regarding claim 1, Applicants note the Office Action appears to gloss over the arguments presented in the previous response and the amendments made therein, simply providing rejections based on rewording Applicants’ claims using language from the cited reference(s) such that the reworded claims appear to align and match limitations found in the cited references. Applicants submit that the actual language of claim 1 includes material differences from the Das and Hsu references.

Applicants initially point to the “generating a first control channel comprising (a) an indicator that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations, the sub-packets comprising at least one slot, the slot comprising at least two sub-slots” limitation found in Claim 1, and submit that, contrary to the assertion in the Office Action, such generating is not shown in Das and/or Hsu.

**The Das Reference**

The Office Action argues that Das illustrates use of two or more control channels per data channel, stating “The first control channel, which is called the primary control channel contains timing information for the user information. The second control channel, which is called the secondary control channel, contains various information that describes the format and

the identification of the user information being transmitted over the data channel” citing Das, col. 1, ll. 55-65, which states:

[0006] Many communication systems comply with standards that require the use of more than one control channel per data channel. For example, in Code Division Multiple Access (CDMA) communication systems that comply with the cdma2000-1x-EV-DV standard, there are two control channels per data channel. The control channels associated with a data channel carry signaling information that dictate how the user information is transmitted over the data channel and how the user information is processed after having propagated through the data channel. **The first control channel, which is called the primary control channel, contains timing information for the user information. The second control channel, which is called the secondary control channel, contains various information that describe the format and the identification of the user information being transmitted over the data channel.**

(Emphasis added)

Applicants contend that the most that can be said of the cited passage in Das is that there are two control channels per data channel, primary and secondary where the primary control channel allegedly contains timing information for the user information, and a secondary control channel allegedly containing various information that describe the format and the identification of the user information. Applicants contend that the limitations presented in claim 1 are not disclosed nor suggested by Das.

Claim 1 requires, *inter alia*, generating a first control channel comprising (1) *an indicator that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations*, the sub-packets comprising (2) *at least one slot*, the slot comprising (3) *at least two sub-slots*. The limitations presented in Claim 1 also require, “generating a first control channel comprising [(4)] *parameters of the shared sub-packet of the traffic channel...*”

It is important, in understanding the present claims and Das, to appreciate the difference between a “slot” and a “packet,” and further that a “sub-slot” is a subset of a “slot.” These terms are generally understood to those skilled in the communications art. Claim 1 recites “the **sub-packets** comprising at least one **slot**, the **slot** comprising at least two **sub-slots...**” Thus at least two sub-slots exist in a slot, and at least one slot exists in a sub-packet. These terms are specific in the claim and are glossed over in attempting to fit Das to the limitations, so it is important to understand and focus on the relationship claimed.

Regarding limitation (3) above, the slot comprising at least two sub-slots, the Office Action cites paragraph [0007] of Das, which states:

**[0007] In CDMA systems complying with the cdma2000-1x-EV-DV standard, information in both control and data channels are transmitted in the form of sub-packets during one or more time slots.**

The cdma2000-1x-EV-DV standard has defined a time slot to be 1.25 milliseconds in duration. At the transmit end, a block of user information--usually a group of bits--is coded and the resulting coded block of user information, which is called a packet, is divided into several sub-packets. The channel coding of the user information is done such that the information contained in the original block of user information can be retrieved from one or a combination of any number of the sub-packets. The amount of information contained in the original block is called the payload size. The payload size is part of the information included in the secondary control channel information.

Applicants contend that the most that can be said of the cited passage in Das is that information is transmitted in the form of sub-packets during one or more time slots. Use of sub-slots, as that term is understood, is not shown in Das. Applicants thus contend that “generating a first control channel comprising (a) an indicator that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations, the sub-packets comprising at least one slot, the slot comprising at least two sub-slots,” as presented in claim 1 is not disclosed nor suggested by Das.

The Office Action attempts to fit the square Das peg into the round “at least two sub-slots” hole of claim 1 by stating “information in both control and data channels are transmitted in the form of sub-packets ‘sub-packets comprising at least one slot’ during one or more time slots ‘sub-slots’ and parameters in the traffic channel,” (Office Action, p. 3) again citing Das, paragraph [0006], reproduced above. Paragraph [0006] includes “in Code Division Multiple Access (CDMA) communication systems that comply with the cdma2000-1x-EV-DV standard, there are two control channels per data channel. ... The first control channel, which is called the primary control channel, contains timing information for the user information. ...”

Thus paragraph [0006] in Das describes a CDMA system compliant with the cdma2000 1xEV-DV standard, where two control channels are associated with a data channel. This paragraph [0006] passage does not disclose nor suggest “sub-packets comprising at least one slot, the slot comprising at least two sub-slots...” Missing from paragraphs [0006] and [0007] of Das is: (a) an indicator; (b) a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations, and (c) the sub-packets comprising at least one slot, the slot comprising at least two sub-slots.

Applicants contend that the most that can be said of the cited passage in Das is that there are two control channels per data channel in accordance with the cdma 2000 1x EV-DV standard, where the primary control channel contains timing information for the user information. Again the concept of an indicator and sharing sub-packets of a traffic channel by a plurality of subscriber stations are neither disclosed nor mention in Das.

The Office Action contends that Das discloses “a primary control channel that contains information about the particular time slot or slots to which the sub-packet in a particular channel is assigned,” and cites paragraph [0019] First, this is not what the claim language says. Second, the cited paragraph of Das, paragraph [0019] merely states:

[0019] When the primary control channel information, the scrambled secondary control channel information and the user information are received, a descrambling operation is performed on the secondary control channel information in accordance with the received primary control channel information and the defined scrambling scheme. **For**

**example, if a received primary control channel information indicates a length of two time slots, the receiving equipment will assume that the received secondary channel information was interleaved with the second column being the first column of information to be output by the interleaver. The receiving equipment will descramble the received secondary information accordingly and then decode the information.**

If the primary control channel contained erroneous information, the decoding operation on the secondary control channel will detect errors because the descrambling operation will not have been the correct one. In other words, regardless of the status of the secondary control channel information, the decoding operation will detect errors if the primary control channel information contained errors.

(Emphasis added)

The Office Action is rewording the Applicants' claims to include language found in the reference. There is no mention in Das of "(a) an indicator that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations, the sub-packet comprising at least one slot, the slot comprising at least two sub-slots," as required in Applicants' Claim 1. The paragraph [0019] passage cited merely discusses a descrambling operation and an unexpected condition wherein "a received primary control channel information indicates a length of two time slots." This does not disclose nor suggest an indicator that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations, the sub-packet comprising at least one slot, the slot comprising at least two sub-slots, or parameters of the shared sub-packet of the traffic channel, each specifically required in Applicants' Claim 1.

#### The Hsu Reference

The Office Action relies on Hsu for the aspect of "generating a first control channel comprising an indicator that a traffic channel is to be shared." Office Action, p. 4. The "indicator" is said to be shown by Hsu at col. 1, ll. 15-20, which states:

defined in a CDMA 2000 cellular communication system that provides 1x EV-DV data services. More particularly, the present invention

relates to apparatus, and an associated method, by which to **allocate, control, and manage the shared channel through the generation of CDM (code division multiplexing) assignment information.**

Neither this passage nor any passage in Hsu discloses nor suggests generating a (first) control channel comprising an *indicator* that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations, as required by the limitations in Claim 1. In addition, the concept of ‘sub-packets’ is not mentioned in Hsu. Moreover, Hsu does not teach “sub-packets comprising at least one slot, the slot comprising at least two sub-slots,” nor “generating a second control channel comprising information enabling the subscriber station to demodulate the traffic channel,” nor other limitations in the claim. At best, Hsu teaches the generation of CDM assignment information for a shared channel. Applicants contend that these limitations of claim 1 are neither disclosed nor suggested by Hsu.

The Office Action goes on to state that Hsu allegedly discloses “.....the generation of CDM assignment information comprising generating a first control channel comprising an indicator,” citing col. 4, ll. 66-67:

In the exemplary implementation, one of the aforementioned control schemes is implemented in a CDMA 2000 communication scheme that provides for high data-rate communications. **Mobile stations register with the communication system pursuant to registration procedures.** Responsive to registration of a mobile station to the communication system, CDM control information is sent to the mobile station. **The mobile station monitors a common, shared control channel to which the mobile station is assigned to receive CDM assignment information thereon.** Because only a single channel is monitored by the mobile station, reduced energy consumption is required of the mobile station pursuant to monitoring of control information, required pursuant to operation of the mobile station in the communication system. The effectuation of high-data-rate communication with the mobile station is thereby facilitated.

This passage describes a mobile station initiating CDMA 2000 procedures and monitoring a shared control channel to which the mobile station is assigned to receive CDM assignment information. Using the language of the claim, no mention is made by Hsu of “generating a first control channel comprising (a) an indicator that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations” as required by Applicants’ Claim 1. At best, Hsu teaches the monitoring for receipt of CDM assignment information and does not involve an indication or indicator that a sub-packet of a traffic channel is to be shared. Applicants contend that this limitation in claim 1 is not disclosed nor suggested by Hsu.

The Office Action, p. 4, further alleges that Hsu discloses, “.....the generation of CDM assignment information comprising: generating a first control channel comprising the mobile channel monitor[ing] a common, shared control channel to which the mobile station is assigned to receive CDM assignment information thereon that a sub packet of a traffic channel is to be shared by a plurality of subscriber stations, the sub packet comprising at least one slot, the slot comprising at least two sub –slots “User 1 CDM Info, User 2 CDM Info, User 3 CDM Info, User 2 CDM Info”, and (b) parameters “the assignment information sets 54 are allocated to three users” of the shared sub-packet of the traffic channel, “ citing col. 2, ll. 64-67, col. 3, ll. 1-7, ll. 10-15, ll.39-43, ll.51-60, col. 4, ll. 24-28, ll. 48-51, ll.66-67, col. 5, ll. 66-67, col. 6, ll.45-47, col. ll. 5-10, ll. 54-58, and, col. 8, ll. 1-3, ll. 55-62.

For space considerations, Applicants do not reproduce all of these cited passages verbatim, but these passages recite aspects of allocation of multiple channel capacity (Hsu col. 2, ll. 64-67); radio channel allocation (Hsu col. col. 3, ll. 1-7); multiple users employing the forward channel (Hsu col. col. 3, ll. 10-15); dedicated pointer pointing to a corresponding forward shared control channel and determination of forward channel assignments (Hsu col. 3, ll. 39-43, and ll.51-60); and other unrelated aspects of CDMA operation for the Hsu device. This scattershot attempt to show the limitation of “generating a first control channel comprising (a) an indicator that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations” is misplaced. Nowhere in Hsu is there a first control channel comprising an indicator that a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations.

In summary, neither Das nor Hsu, separately or in combination, disclose “generating a first control channel comprising (a) an indicator that a sub-packet of a traffic channel is to be

shared by a plurality of subscriber stations, the sub-packets comprising at least one slot, the slot comprising at least two sub-slots,” as required by the limitations in Claim 1.

### Combination of References

Again, Hsu is solely relied on as purportedly showing the “generating a first control channel comprising (a) an indicator that a sub-packet of a traffic channel is to be shared” limitation.

Applicants disagree that one of ordinary skill in the art would have a reason to combine the features disclosed in the Das and Hsu references in the manner suggested in the Office Action. Applicants submit that a combination of Das and Hsu is unreasonable, and such a combination is using hindsight to reconstruct the claimed invention. Neither Hsu nor Das call for generating a control channel comprising an indicator that a sub-packet of traffic channel is to be shared, by a plurality of subscriber stations, the sub-packets comprising at least one slot, the slot comprising at least two sub-slots. Hsu does not discuss the aspects of the second control channel claimed and thus would not be employed or relied on to solve the problem currently solved by the present design.

The PTO has the burden of establishing a prima facie case of obviousness under 35 USC §103. The Patent Office must show that some reason to combine the elements with some rational underpinning that would lead an individual of ordinary skill in the art to combine the relevant teachings of the references. *KSR International Co. v. Teleflex Inc.*, No. 04-1350, 550 U.S. \_\_\_\_ (2007); *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Therefore, a combination of relevant teachings alone is insufficient grounds to establish obviousness, absent some reason for one of ordinary skill in the art to do so. *Fine* at 1075. In this case, the Examiner has not pointed to any cogent, supportable reason that would lead an artisan of ordinary skill in the art to come up with the claimed invention.

None of the references, alone or in combination, teaches the unique features called for in the claims. It is impermissible hindsight reasoning to pick a feature here and there from among the references to construct a hypothetical combination which obviates the claims.

It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's



structure as a template and selecting elements from references to fill the gaps. [*citation omitted*]

*In re Gordon*, 18 USPQ.2d 1885, 1888 (Fed. Cir. 1991).

A large number of devices may exist in the prior art where, if the prior art be disregarded as to its content, purpose, mode of operation and general context, the several elements claimed by the Applicant, if taken individually, may be disclosed. However, the important thing to recognize is that the reason for combining these elements in any way to meet Applicant's claims only becomes obvious, if at all, when considered from hindsight in the light of the application disclosure. The Federal Circuit has stressed that the "decisionmaker must step backward in time and into the shoes worn by a person having ordinary skill in the art when the invention was unknown and just before it was made." *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566 (Fed. Cir. 1987). To do otherwise would be to apply hindsight reconstruction, which has been strongly discouraged by the Federal Circuit. *Id.* at 1568.

To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.

*W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983). Therefore, without some reason in the references to combine the cited prior art teachings, with some rational underpinnings for such a reason, the Examiner's conclusory statements in support of the alleged combination fail to establish a prima facie case for obviousness. *See, KSR International Co. v. Teleflex Inc.*, (obviousness determination requires looking at "whether there was an apparent reason to combine the known elements in the fashion claimed...", citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness," KSR at 14).

The reasoning supporting the combination is to "improve the throughput of the system by allowing multiple mobile [stations] to monitor a single shared, control channel..." Office Action, p. 5.

This is merely a conclusion reciting the benefits of inventions in this broad field used to justify selecting among references based on aspects presented in the claims. It is always beneficial to improve operation, throughput, cost, efficiency, and so forth, but the question is what reasoning would have been used by one to take the teachings of Das and modify them in a manner consistent with Hsu. Here, no such reason has been articulated. Conclusory reasoning such as that presented is improper hindsight reconstruction of the invention, and for this further reason, claim 1 and claims depending therefrom are allowable over the cited references.

Based upon the totality of the foregoing, Applicants respectfully submit that claim 1, as amended, is allowable over the references of record, and all claims dependent therefrom are also allowable as they include limitations not present in the cited references.

Accordingly, it is respectfully submitted that all pending claims fully comply with 35 U.S.C. § 103.

New claims 27-33

Applicants have added new claims 27-49, but focus specifically on new claims 27-33.

New independent claim 27 includes language similar to independent claim 8 and recites:

wherein the first control channel is configured to be received by a first subscriber station configured to demodulate the first control channel to determine whether a sub-packet of a traffic channel is to be shared by a plurality of subscriber stations and if the sub-packet of the traffic channel is to be shared, a number of subscriber stations sharing the sub-packet of the traffic channel is determined and the traffic channel demultiplexed in accordance with said demodulated first control channel;

and further wherein the second control channel is configured to be received and demodulated and comprises (a) an identity of a subscriber station intended to share the sub-packets and (b) information enabling the subscriber station intended to share the sub-packets to demodulate the traffic channel; and

if the subscriber station identity of the second control channel matches the identity of the first subscriber station, the traffic channel is configured to be received and demodulated in accordance with said determined multiplexing and the enabling information.

Das and Hsu do not teach nor disclose a method wherein the first control channel is configured to be received by a first subscriber station configured in the manner claimed, nor the second control channel configured to be received and demodulated in the manner claimed.

Applicants' respectfully submit that Das and Hsu, alone or in combination, do not teach or suggest Applicants' new claim 27 nor dependent claims 28-33.

New claims 34-49

Claims 34-49 are allowable for the reasons presented above or previously discussed, and these new claims include limitations not found in Das and Hsu either alone or in combination, and are therefore allowable over the cited references.

Accordingly, it is respectfully submitted that all claims fully comply with 35 U.S.C. § 103.

**REQUEST FOR ALLOWANCE**

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Please charge any fees or credit overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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